INJECTION WELL PLUGGING PLAN
40 CFR 146.92(b)

Pelican Sequestration Project

1.0 Facility Information

Facility name: Pelican Sequestration Project
Pelican CCS 2 Well

Facility contact: [redacted], Project Manager
5 Greenway Plaza Houston, TX 77046
[redacted]

Well location: Holden, Livingston Parish, Louisiana
[redacted] (NAD 1927, BLM Zone 15N)

The Pelican Sequestration Hub, LLC will conduct injection well plugging and abandonment according to the procedures below.

Upon the end of life for the Pelican CCS 2, this injection well will be plugged and abandoned relevant to the requirements of Environmental Protection Agency (EPA) document 40 CFR Subpart H – Criteria and Standards Applicable to Class VI Wells. The plugging procedure and materials will be designed to prevent any unwanted fluid movement, resist the corrosive aspects of carbon dioxide (CO_2) with water mixtures, and protect any underground sources of drinking water (USDWs).

2.0 Planned Tests or Measures to Determine Bottom-Hole Reservoir Pressure

1. Bottomhole pressure measurements will be taken using the installed downhole gauges. In case the gauges are not functioning properly, the operator will run pressure gauges during the P&A process of the well.

2. After injection has ceased, the well will be flushed with a kill fluid. A minimum of three tubing volumes will be injected without exceeding the fracture pressure. The injection packer and the tubing will be removed.

3. An active pulsed neutron log and/or casing inspection tool will be run and the well will be pressure tested to ensure integrity both inside and outside the casing prior to plugging.

4. If a loss of mechanical integrity is discovered, the well will be repaired before proceeding further with the plugging operations.

5. All casing in this well will have been cemented to the surface at the time of construction and will not be retrievable at abandonment.

6. A cement retainer will be used to squeeze and isolate the perforated section to prevent flowback of formation fluids that could contaminate the plug. The balanced-plug placement method will be used for the additional cement plugs planned.

7. Heavy gel mud [redacted] ppg will be left between cement plugs.

8. All the casing strings will be cut off at least [redacted] ft below the surface and plow line.

9. A blanking plate with the required permit information will be welded on top of the cutoff casing.

Any necessary revisions to the well plugging plan to address any new information collected during logging, testing, and completion of the well will be made after these activities have been completed. The final plugging plan will be submitted to the Underground Injection Control (UIC) Program Director.

3.0 Planned External Mechanical Integrity Test(s)

The Pelican Sequestration Hub, LLC will conduct at least one of the tests listed below to verify external mechanical integrity prior to plugging the injection well as required by 40 CFR 146.92(a).

a) Pulse neutron log.
b) Noise log
c) DTS (Distributed Temperature Sensing) /DAS (Distributed Acoustic Sensing) survey.
d) Temperature log

4.0 Information on Plugs

The Pelican Sequestration Hub, LLC will use the materials and methods noted in Table PLG-1 to plug the injection well. The volume and depth of the plug or plugs will depend on the final geology and downhole conditions of the well as assessed during construction. The cement(s) formulated for plugging will be compatible with the carbon dioxide stream. The cement formulation and required certification documents will be submitted to the agency with the well plugging plan. The owner or operator will report the wet density and will retain duplicate samples of the cement used for each plug.

Table PLG-1—Information on Cement Plugs Pelican CCS 2

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									
[redacted]									
[redacted]									
[redacted]									

- All plug depths will be adjusted after the well is drilled and completed.
- The plugging procedure will be updated as required by EPA and Louisiana regulators.
- Formation tops will be adjusted after running open hole electric logs.

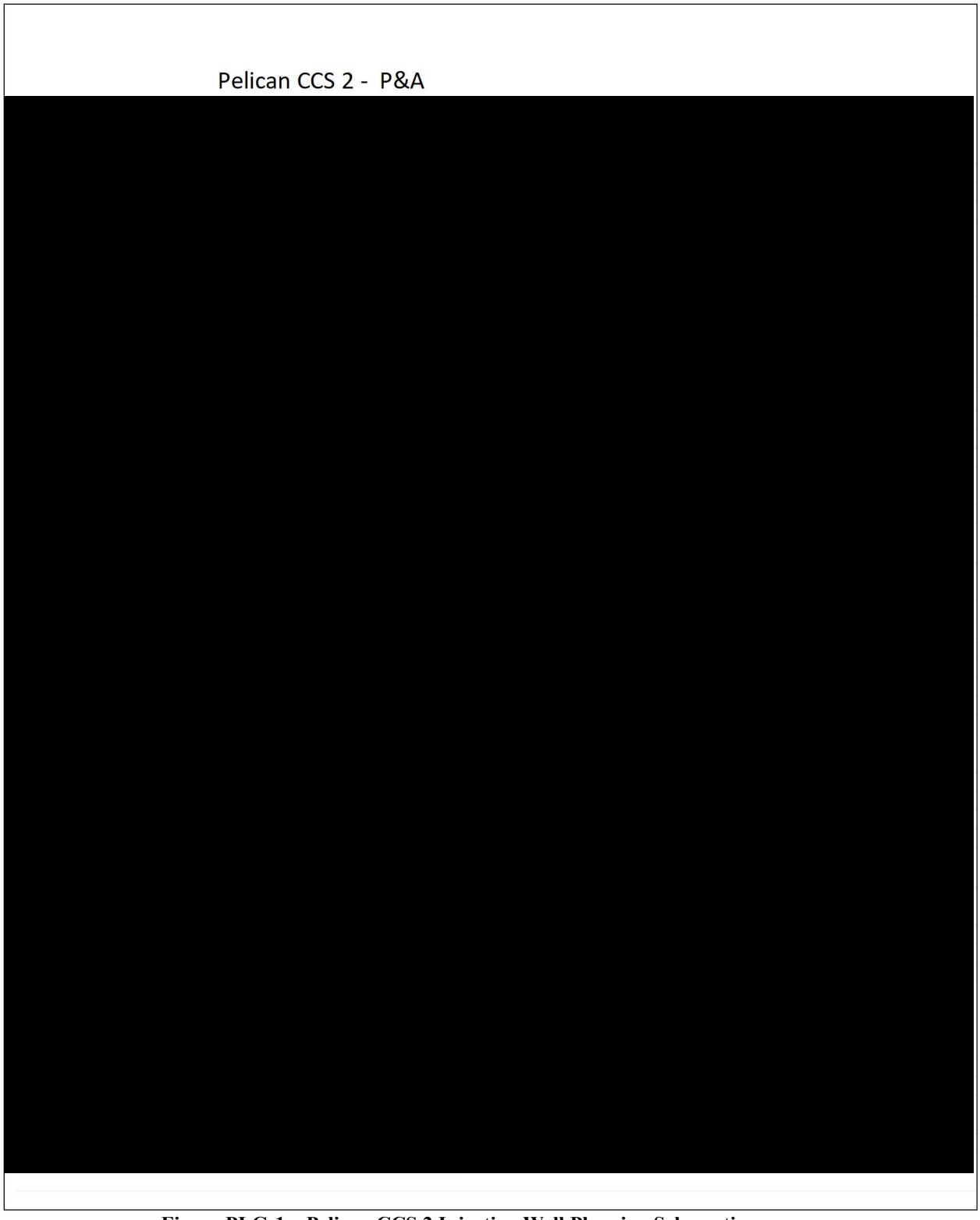
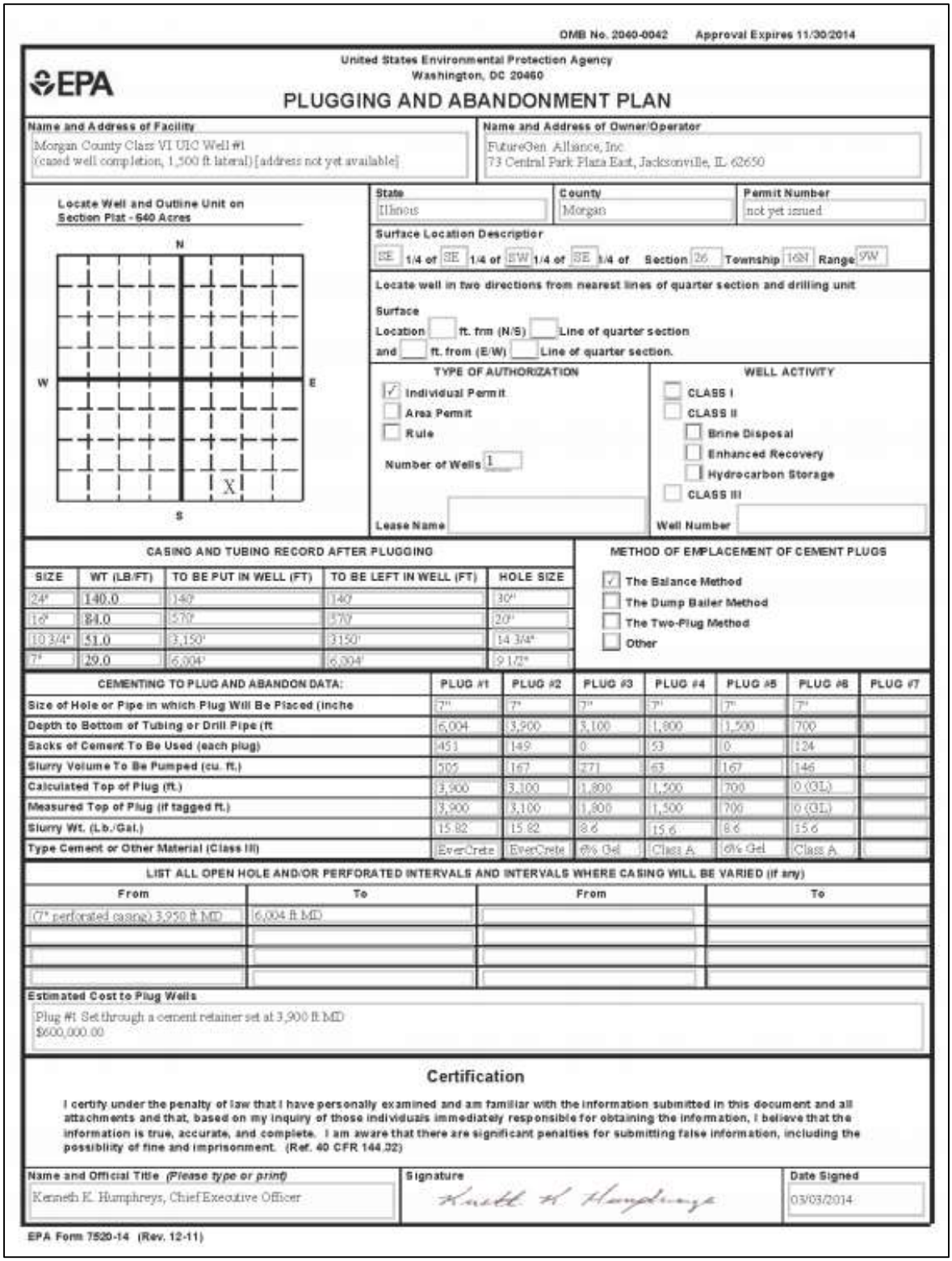


Figure PLG-1—Pelican CCS 2 Injection Well Plugging Schematic



OMB No. 2060-0042 Approval Expires 11/30/2014

United States Environmental Protection Agency
Washington, DC 20460

EPA

PLUGGING AND ABANDONMENT PLAN

Name and Address of Facility
Morgan County Class VI UIC Well #1
(cased well completion, 1,500 ft lateral) [address not yet available]

Name and Address of Owner/Operator
FutureGen Alliance, Inc.
73 Central Park Plaza East, Jacksonville, IL 62650

Locate Well and Outline Unit on Section Plat - 640 Acres

N / W / E / S — X

State	County	Permit Number
Illinois	Morgan	not yet issued

Surface Location Description
SE 1/4 of SE 1/4 of SW 1/4 of SE 1/4 of Section 26 Township 16N Range 9W

Locate well in two directions from nearest lines of quarter section and drilling unit

Surface Location ____ ft. frm (N/S) ____ Line of quarter section
and ____ ft. from (E/W) ____ Line of quarter section.

TYPE OF AUTHORIZATION
- [✓] Individual Permit
- [ ] Area Permit
- [ ] Rule

Number of Wells 1

Lease Name

WELL ACTIVITY
- [ ] CLASS I
- [ ] CLASS II
  - [ ] Brine Disposal
  - [ ] Enhanced Recovery
  - [ ] Hydrocarbon Storage
- [ ] CLASS III

Well Number

CASING AND TUBING RECORD AFTER PLUGGING

SIZE	WT (LB/FT)	TO BE PUT IN WELL (FT)	TO BE LEFT IN WELL (FT)	HOLE SIZE
24"	140.0	140'	140'	30"
16"	84.0	570'	570'	20"
10 3/4"	51.0	3,150'	3150'	14 3/4"
7"	29.0	6,004'	6,004'	9 1/2"

METHOD OF EMPLACEMENT OF CEMENT PLUGS
- [✓] The Balance Method
- [ ] The Dump Bailer Method
- [ ] The Two-Plug Method
- [ ] Other

CEMENTING TO PLUG AND ABANDON DATA:	PLUG #1	PLUG #2	PLUG #3	PLUG #4	PLUG #5	PLUG #6	PLUG #7
Size of Hole or Pipe in which Plug Will Be Placed (inche	7"	7"	7"	7"	7"	7"	
Depth to Bottom of Tubing or Drill Pipe (ft	6,004	3,900	3,100	1,800	1,500	700	
Sacks of Cement To Be Used (each plug)	451	149	0	53	0	124	
Slurry Volume To Be Pumped (cu. ft.)	205	167	271	63	167	146	
Calculated Top of Plug (ft.)	3,900	3,100	1,800	1,500	700	0 (GL)	
Measured Top of Plug (if tagged ft.)	3,900	3,100	1,800	1,500	700	0 (GL)	
Slurry Wt. (Lb./Gal.)	15.82	15.82	8.6	15.6	8.6	15.6	
Type Cement or Other Material (Class III)	EverCrete	EverCrete	6% Gel	Class A	6% Gel	Class A	

LIST ALL OPEN HOLE AND/OR PERFORATED INTERVALS AND INTERVALS WHERE CASING WILL BE VARIED (If any)

From	To	From	To
(7" perforated casing) 3,950 ft MD	6,004 ft MD		

Estimated Cost to Plug Wells
Plug #1 Set through a cement retainer set at 3,900 ft MD
$600,000.00

Certification

I certify under the penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. (Ref. 40 CFR 144.32)

Name and Official Title (Please type or print)	Signature	Date Signed
Kenneth E. Humphreys, Chief Executive Officer	Kenneth E. Humphreys	03/03/2014

EPA Form 7520-14 (Rev. 12-11)

Figure PLG-2—Sample EPA Plugging and Abandonment Form

5.0 Narrative Description of Plugging Procedures for Injection Well

5.1 Notifications, Permits, and Inspections

In compliance with 40 CFR 146.92(c), the Pelican Sequestration Hub, LLC will notify the regulatory agency at least 60 days before plugging the well and provide updated Injection Well Plugging Plan, if applicable.

5.2 Plugging Procedures

1. Move in rig onto the Pelican CCS 2 site and rig up (RU). All CO_2 pipelines will be marked and noted with the rig supervisor prior to move in.

2. Conduct and document a safety meeting.

3. Record the bottomhole pressure (BHP) from the downhole gauge, perform DST survey through fiber optic installed alongside the casing, and calculate kill fluid density.

[redacted]

[redacted]

Note: If a failure in the long string casing is identified, the operator will prepare a plan to repair the well before plugging and abandonment.

6. If both the casing and tubing are dead, then nipple up the blowout preventers (BOPs).

7. Pull out of the hole and lay down tubing, packer, cable, and sensors.

Contingency: [redacted]

8. Pick up the work string and trip in hole (TIH) with the bit to condition the wellbore.

[redacted]

10. TIH with the work string with a cement retainer to the top of [redacted] ft. Circulate the well, set the retainer, and perform an injectivity test. Rig up equipment for cementing operations.

[redacted]

15. Lay down the work string. Rig down all equipment and move out. Cut the casing at 5 ft below the ground. Clean the cellar to where a plate can be welded with the required well information.

The procedures described above are subject to modification during execution as necessary to ensure a successful plugging operation. Any significant modifications due to unforeseen circumstances will be described in the plugging report.

The proposed plugging details and schematics for Pelican CCS 1, [redacted] are included in Appendix A.

Appendix A: CCS 1 CO_2 Injector, Monitoring and USDW Well Plugging Plans

Pelican CCS 1:

Table PLG-2—Information on Cement Plugs for Pelican CCS 1

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									
[redacted]									
[redacted]									
[redacted]									

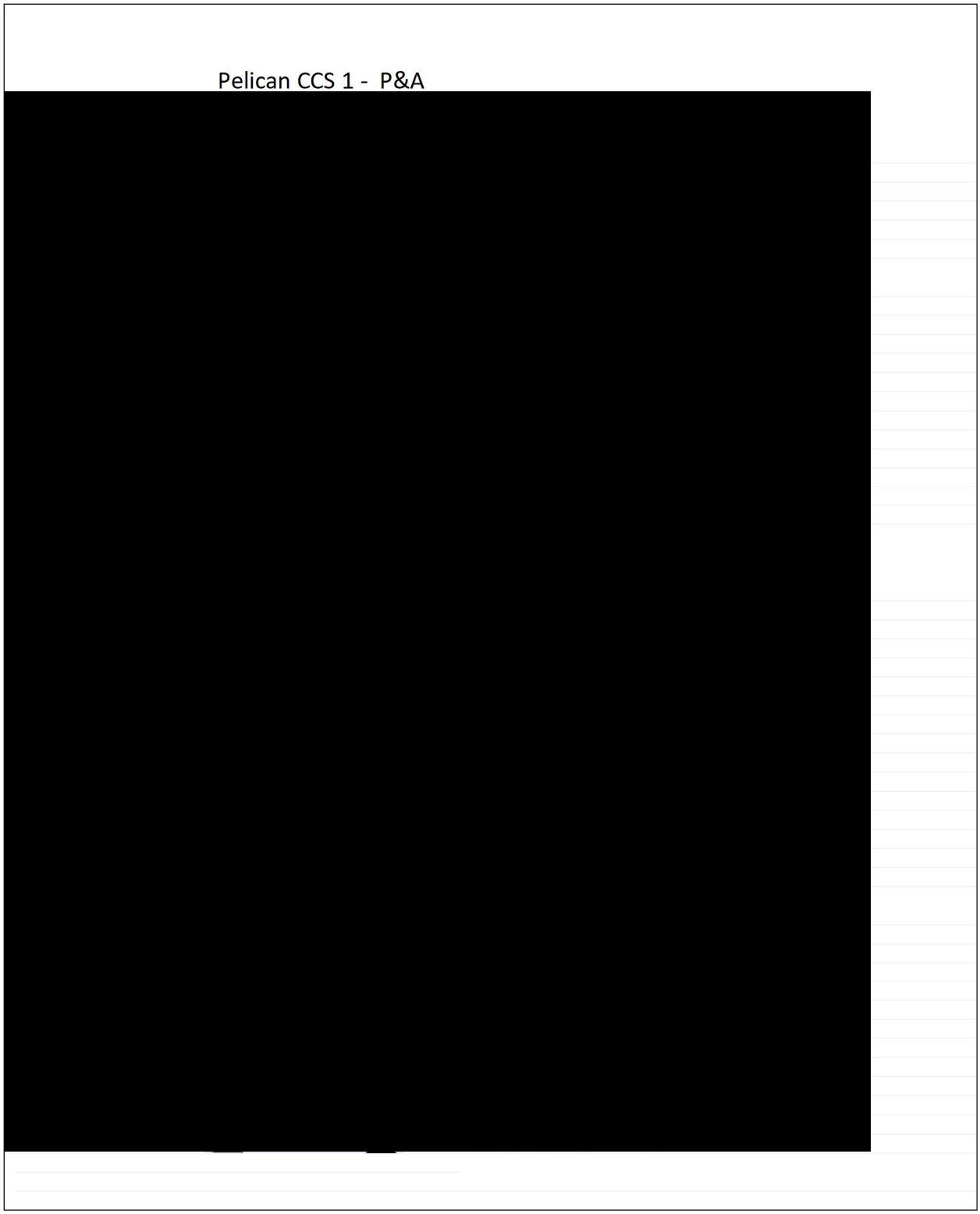


Figure PLG-3 Plugging Design and Schematic for Pelican CCS 1

[redacted]

Table PLG-3—Information on Cement Plugs for [redacted]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									

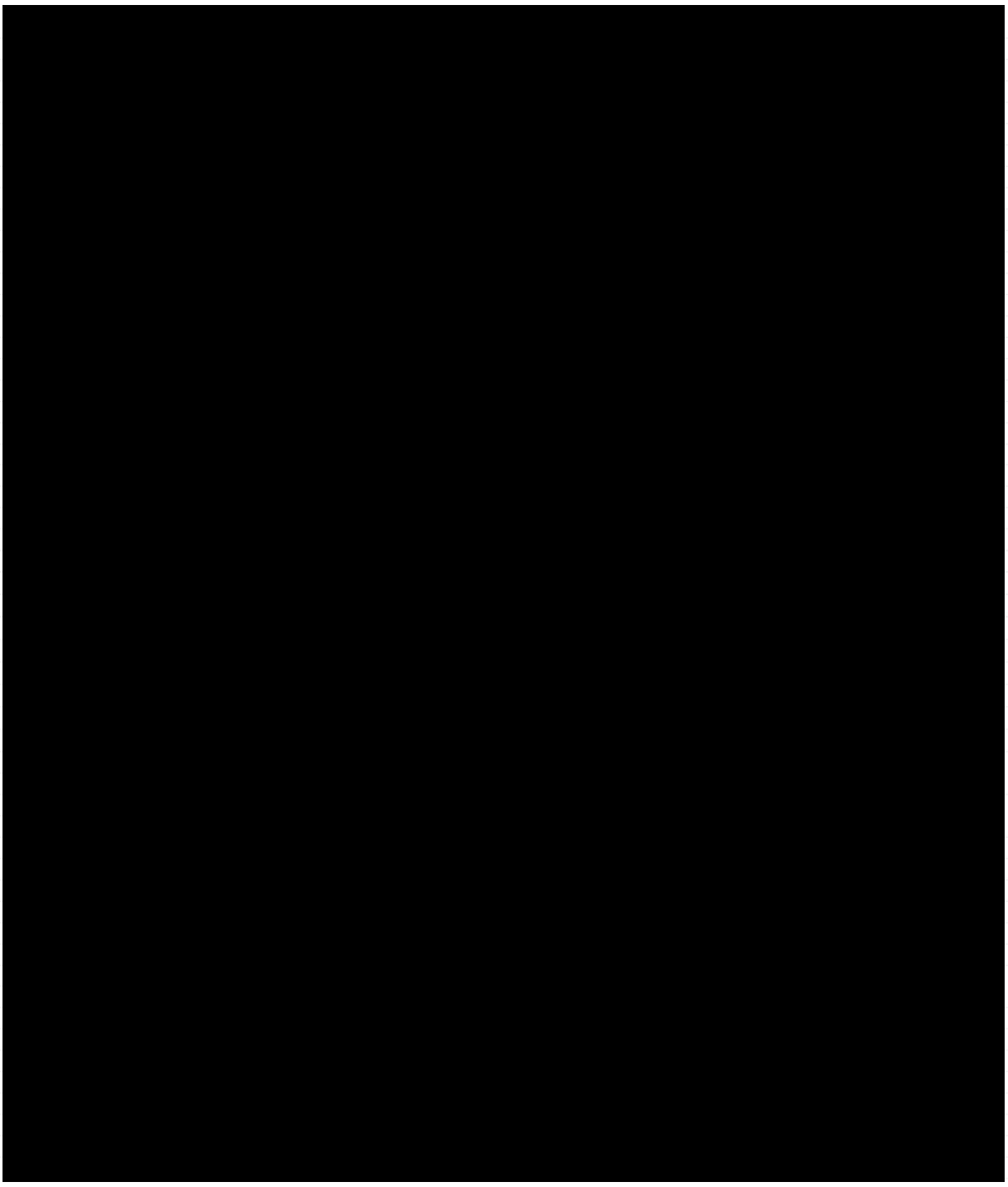


Figure PLG-4—Plugging Design and Schematic for [redacted]

[redacted]

Table PLG-4—Information on Cement Plugs for [redacted]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									

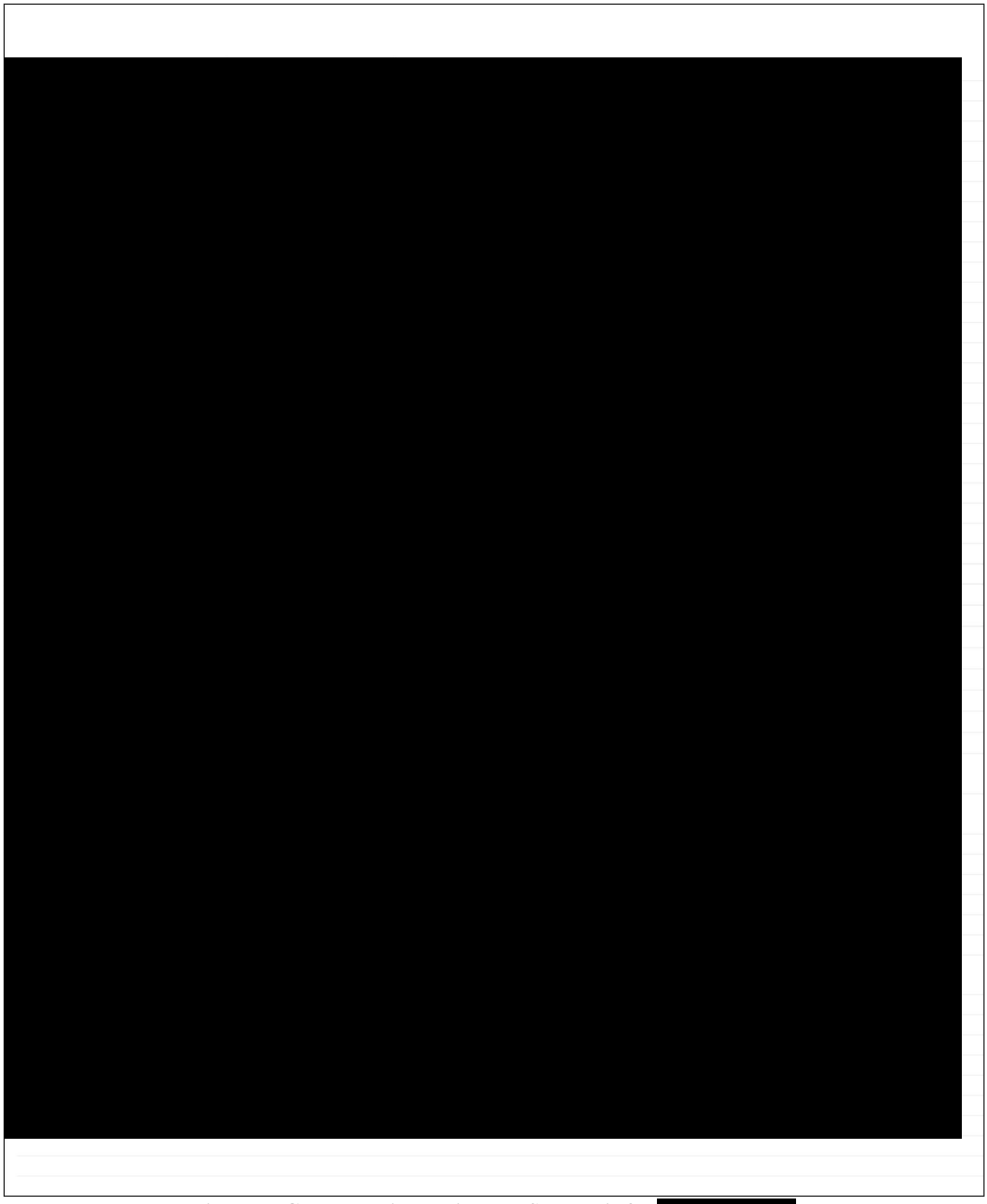


Figure PLG-5—Plugging Design and Schematic for [redacted]

[redacted]

Table PLG-5—Information on Cement Plugs for [redacted]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									

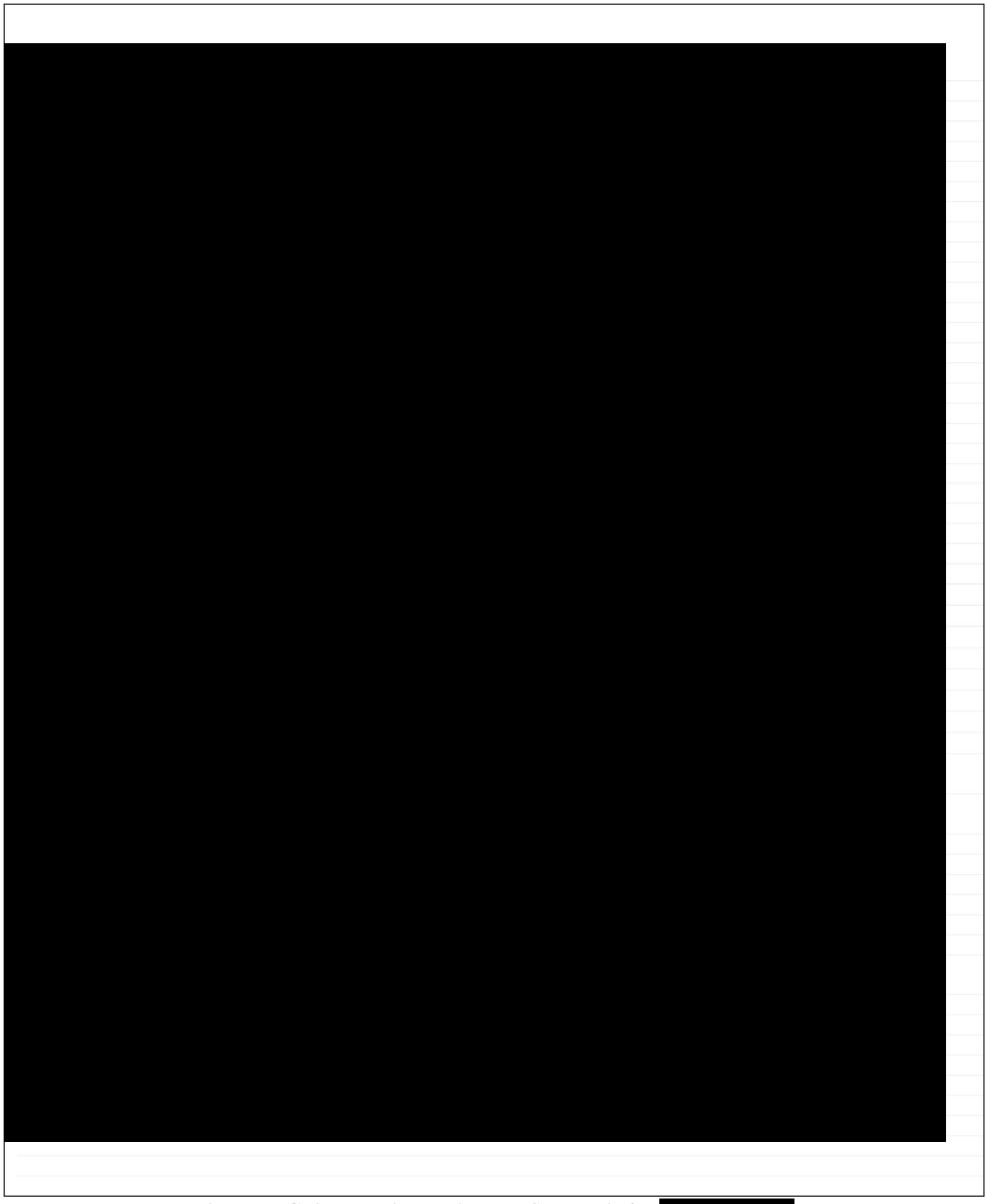


Figure PLG-6—Plugging Design and Schematic for [redacted]

[redacted]

Table PLG-6—Information on Cement Plugs for [redacted]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									

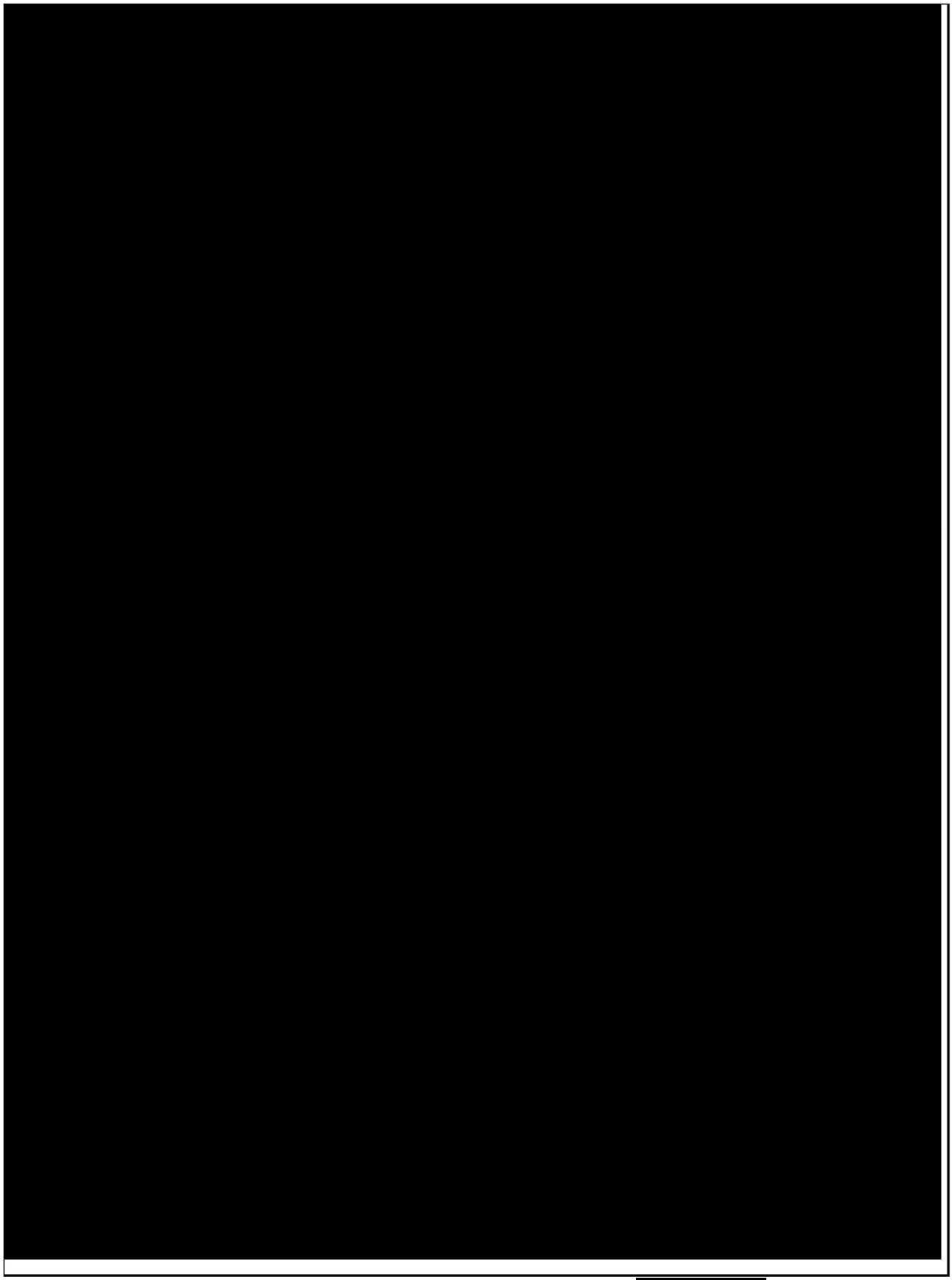


Figure PLG-7—Plugging Design and Schematic for [redacted]

[redacted]

Table PLG-7—Information on Cement Plugs for [redacted]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									
[redacted]									
[redacted]									

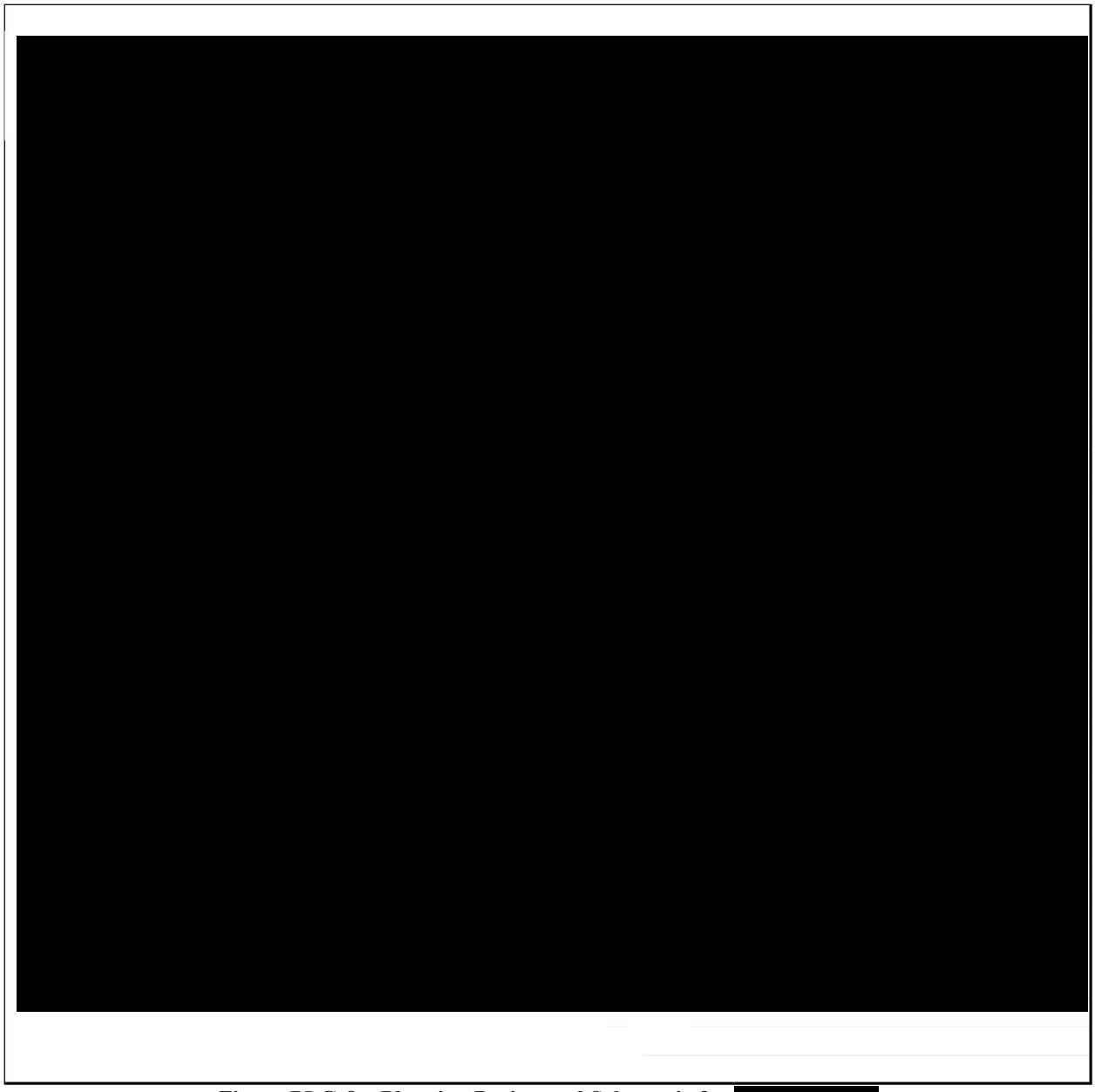


Figure PLG-8—Plugging Design and Schematic for [redacted]

[redacted]

Table PLG-8—Information on Cement Plugs for [redacted]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									
[redacted]									

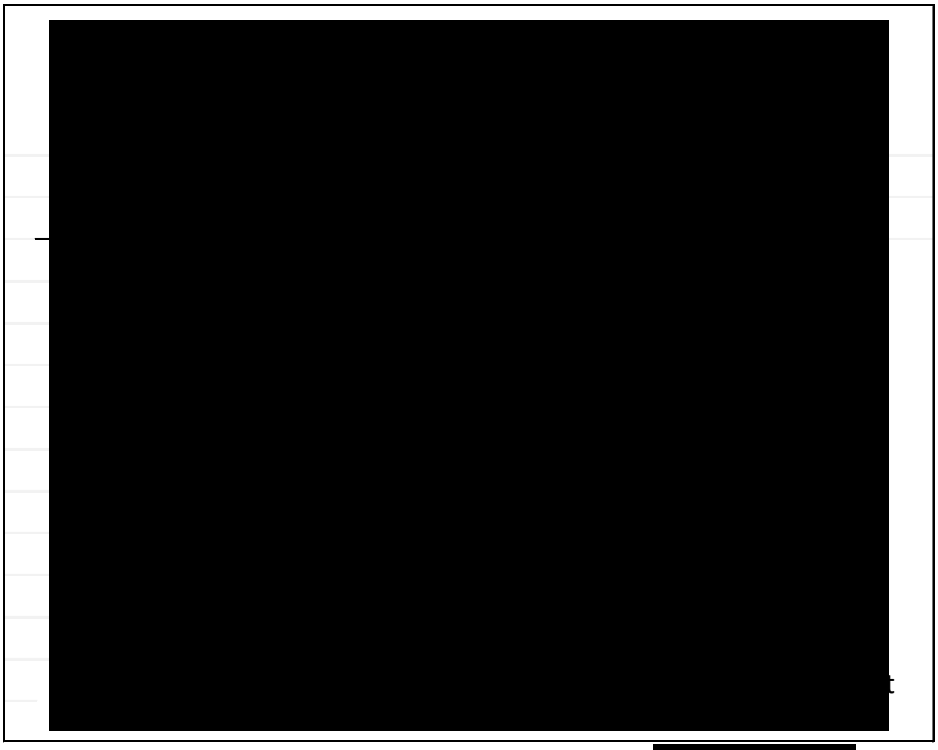


Figure PLG-9—Information on Cement Plugs for [redacted]

[redacted]

Table PLG-9—Information on Cement Plugs for [redacted]

Plug No	Type Slurry	ID (inches)	Placement Method	Depths top (ft)	Depths bottom (ft)	Density (ppg)	Sacks	Excess	Yield ft3/sx
[redacted]									

[redacted]

Figure PLG-10—Information on Cement Plugs for [redacted]